

THE POLAR TIMES



Canadian icebreaker *Louis S. Ste. Laurent* and U.S. Coast Guard icebreaker *Polar Sea* near North Pole, Aug. 22, 1994.

Secretary's Letter

On this, the 60th anniversary of the founding of the American Polar Society, I find myself pondering our future. What are the goals of the Society? Where are we headed? What is our purpose? Good questions! I don't know. I've been so busy trying to get organized and publish *The Polar Times* that I haven't looked up to see where we are going. I would like your thoughts on the matter. Please write.

Looking back at some of the correspondence, I find that we have had national meetings in both New York and San Francisco. These were replete with awards and seminars. Is there any interest in a national get-together? If so, where? Do we have a volunteer to pull it all together? Again, I would like to hear from you.

Through donations of personal collections the Society has built up an extensive library of polar material over the last 60 years. I have neither the time nor the inclination to manage such a collection. With the concurrence of the Board of Governors, we have entered into an agreement with Ohio State University to establish an APS Collection within the Byrd Polar Research Center Library making our books available

to the public.

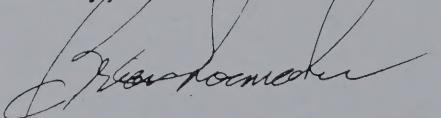
There are several other institutions in the United States and Canada that would like to expand their collections in the name of the American Polar Society. So those of you inclined to give away those books and papers that you have lovingly gathered, please contact me. I will see that they are routed to a credible institution.

We are trying to set aside enough money to purchase our own computer desk-top publishing capability.

Publishing a magazine is expensive and this will reduce our costs as well as improve our ability to serve the Society. It will cost us some \$6000 for the system that we have in mind. We have about \$2000 set aside and could use some donations to help us towards this goal.

Again, thank you for your continuing flow of encouraging comments, and thank you for all of the news clippings; this issue has been published almost exclusively with your input.

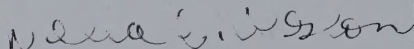
Please tell your friends about the American Polar Society and recommend that they join.




Editor's Note

Yes, this is it—the official pinning of the new American Polar Society pin and, yes, that is your secretary, Capt. Brian Shoemaker, USN (Ret.), pinning your editor, Della Weston, on July 4, 1994. The pin is beautiful! To order yours, use the blank below.

Thanks again for all your letters of information and support; without your input, we could not continue to improve.



American Polar Society

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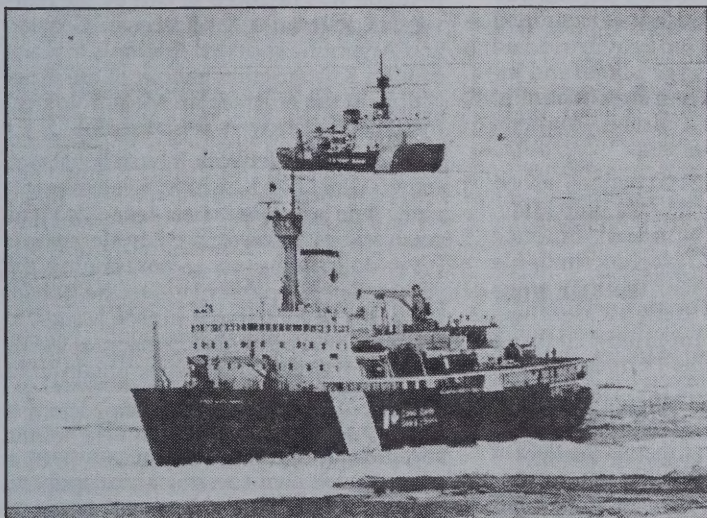
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Icebreakers Reach the North Pole



The Canadian icebreaker *Louis S. Ste. Laurent* leads the U.S. Coast Guard's icebreaker *Polar Sea* through 8- to 12-foot-thick ice as they plow through to the North Pole on a scientific mission.

Washington, Aug. 22, 1994—the Coast Guard announced that the U.S. Coast Guard Cutter *Polar Sea* and the Canadian Coast Guard Cutter *Louis S. Ste. Laurent* reached the North Pole at 8 a.m. Eastern Standard Time today. They became the first North American surface ships to reach the North Pole. For the *Polar Sea*, this feat

complements her sailing to 78° 29.9' south in the Bay of Whales in Antarctica on Feb. 4, 1994, the farthest south record of any ship in history.

The *Polar Sea* is a 399-foot icebreaker from Seattle, Wash., and the *Ste. Laurent* is a 396-foot icebreaker from Halifax, Nova Scotia. The two ships are taking part in Arctic Ocean Section 1994, a joint U.S./Canada science project. They are conducting an extensive, multi-disciplinary scientific study that began in Nome, Alaska, on July 24 and will end in late September in Barrow, Alaska.

This summer's expedition is the culmination of four years of joint

planning by government agencies in the U.S. and Canada. Researchers from more than 20 institutions will participate in the studies that promise to produce several scientific firsts.

Recent scientific studies have suggested that all aspects of global change may be amplified in the Arctic. Until now, the sparsity of basic shipborne measurements of the world's least studied ocean have made it impossible to understand the processes which drive global climate change. The results of the studies being undertaken by the two icebreakers will add to scientific understanding of the processes which affect the oceanic circulation and the global climatic balance.

The lead scientists are Dr. Knut Aagaard from the University of Washington and Dr. Eddy Carmack from the Institute of Ocean Sciences in Nanaimo, B.C.

The commanding officer of the *Polar Sea* is Capt. Lawson Brigham, U.S. Coast Guard, and the commanding officer of the *Ste. Laurent* is Capt. Philip Grandy, Canadian Coast Guard. (See "Nuptials," p. 18.) □

August Howard "Founder" presentation

by RICHARD L. CHAPPELL

In honor of the memory of August Howard, a picture inscribed "August Howard, Founder, American Polar Society" was presented to his wife, Rose Howard, by Malcolm Browne, president of the Society. The presentation was made on the occasion of Mrs. Howard's 80th birthday on 25 May 1994 at the offices of the *New York Times*. Also present were

the Howards' children, Doris and Alan, and the Society's vice president, Richard Chappell.

The presentation recognized August Howard's vision and dedication of his efforts as founder and secretary of the Society who produced and distributed *The Polar Times* from the initial issue until the time of his death. □



Mrs. Rose Howard on her 80th birthday, receiving a picture inscribed "August Howard, Founder, American Polar Society," presented by President Malcolm Browne. Others pictured (l. to r.), Richard Chappell, Doris Howard and Alan Howard.

In Antarctica, More Perilous Expeditions and Difficult Rescues

by WALTER SULLIVAN

The icy plains of Antarctica, for the last half century the purview of scientists, have lately become popular with a new kind of adventurer, often backed by private sponsors.

As the expeditions become bolder, they also become more perilous. And as American scientific support teams are increasingly called on to conduct search-and-rescue missions, the National Science Foundation says, scientific research may soon begin to suffer.

The distraction comes just as the South Pole, uniquely situated on the spin axis of the Earth, is emerging as a major research center in many fields of science.

For now, anyone with enough money can embark on an Antarctic expedition. The national Science Foundation has called for certification of nonscientific visitors, saying it fears that more accidents and demands for rescue flights will interfere with its research programs.

The most recent accident occurred in late January when four Norwegians, driving snowmobiles near the Ellsworth Mountains inland from Filchner ice Shelf, ran into a field of crevasses, many of them concealed by snow. They were 600 miles from their goal, the South Pole.

Their aim was to find the tent and Norwegian flag left by Roald Amundsen in 1911, when he and his companions, in what was then a historic feat of exploration, were first to reach the bottom of the world. The relic was to be returned to Norway in time for display at the Olympic games, whose Norwegian sponsors helped support the venture.

The team had already staked out the site where it guessed the tent would be, not far from the American base at the pole. They had taken into consideration the estimate that the ice would have moved 2,700 feet in the intervening 83 years. Although the tent would presumably be covered by snow, ice-penetrating radar would help to locate it.

The team's misfortunes began in late January when one of the party and his snowmobile fell 70 feet down a crevasse. Like his three companions, he had been driving a snowmobile with sled in tow. He was rescued, but suffered cracked ribs and a concussion. They camped while the leader, a 35-year-old Norwegian Army captain, studied the crevasse field on foot, only himself to fall 128 feet down another crevasse, becoming wedged between its icy walls.

Twenty-eight hours later, a Norwegian government call for assistance was relayed via the State Department to the main American base at McMurdo Sound. On Jan. 27, an American-New Zealand rescue team was flown to the South Pole, halfway to the accident site, which was examined from the air. It proved too heavily riddled with crevasses for a large plane, and instead a twin-engined Otter aircraft on skis, with three experienced climbers and one medical corpsman, was sent.

The rescuers, taking no chances, lashed themselves to the plane while unloading, according to the national Science Foundation's account. Traveling single file and roped together, it took them six hours to cover the one mile to the accident site, one or another of them falling 20 times through collapsing snow bridges.

Tracks in the snow, they reported, indicated that the Norwegians "had driven four snowmobiles into the crevasse field at high speed and in a line-abreast formation"—an invitation to disaster, said David Bresnahan of the National Science Foundation, who organized the rescue from McMurdo Sound. The recommended procedure in such an area, according to *Survival in Antarctica*, the foundation handbook, is for the group to proceed single file, roped together, and for the leader to probe the snow every meter with a pole. "An unroped fall into a crevasse is almost certainly fatal," the handbook notes.

The rescuers saw 50 holes where crevassed snowbridges had apparently caved in under the Norwegian snowmobiles. The fatal crevasse was four feet wide at the top. The rescuers parked one of the Norwegian snowmobiles 150 feet from the crevasse, for use as an anchor, as the leader of the rescue team, Steve Dunbar, was lowered into the chasm. He was able to go down only 125 feet, at which point the walls of the crevasse had narrowed to eight inches.

He could see the victim three feet below, wedged on his side and covered with snow. The temperature was 40 degrees below zero, and the fallen man had been there more than two days. There was no sign of life and, they reported, no way to retrieve the body. The American team brought out the survivors, including the concussion victim, who had double vision but could walk.

The National Science Foundation has billed the Norwegian expedition more than \$100,000 for the rescue, and the Norwegian government is expected to pay.

Anne Kershaw, manager of Adventure Network International, which had flown the Norwegians to their starting point, said the leader of the expedition was experienced in polar travel. She said the expedition was financed in part by the Norwegian government and received German and Argentine support. Attempts to reach Monica Kristensen, organizer of the expedition, at the Norwegian Meteorological Institute in Oslo were unsuccessful.

Adventure Network International was founded by Giles Kershaw, a veteran Antarctic flyer who died in an Antarctic plane crash several years earlier. Ms. Kershaw is his widow. In the season now ending, the group flew 69 passengers to the Patriot Hills and beyond to the Vinson Massif, to the Pole, or to other sites. Vinson, at 16,000 feet, is Antarctica's highest mountain and a favorite of climbers.

On a succession of flights the year before, Ms. Kershaw said, her company's planes, which have a virtual monopoly on such services, carried almost twice as many passengers. The fare for a trip by large plane to Patriot Hills and on to the Pole by Otter is now about \$19,500, down from \$35,000 a few years ago. A number of visitors flown in to Patriot Hills have traveled the remaining 600 miles to the Pole on skis.

There was a nongovernmental rescue last November when a privately chartered DC-6 transport plane crashed at Patriot Hills, a blue-ice site in the Antarctic interior suitable for landing large wheeled aircraft. Aboard were 20 dogs that Norman Vaughan, one of three dog drivers on Adm. Richard Byrd's first expedition in 1928, planned to use on an expedition to the mountain that bears his name.

Now 88, Vaughan still drives dog teams in Alaska and has acquired some of Adm. Byrd's genius for raising money, charming lecture audiences and winning political support. He was in Punta Arenas, Chile, at the time of the crash, preparing to follow his dogs and supplies.

As the plane approached the ice runway, its windshield apparently iced over and it crashed. No one was killed, but the veterinarian, Dr. Jerry Vanek, suffered a fractured skull, broken arm and shattered leg. Ms. Kershaw, whose plane rescued the downed fliers, said the dogs were set free for fear the plane might explode. Sixteen were then recovered, but the remaining four presumably perished. Vaughan says a new attempt may be made next season. □

Arctic Road Plan Touted as Gold Mine for Struggling Area

by JERRY ULBRICH

Washington Times, March 27, 1994, Yellowknife, Northwest Territories—This vast, harsh territory covering one third of Canada is Ottawa's poor relation: isolated, underpopulated and living on federal handouts.

There are riches here—gold, diamonds, copper, lead, silver and zinc—but temperatures of minus-40 degrees or worse, 10 months of winter and dependence on air transport for moving goods make mining difficult and costly.

Nellie Cournoyea and her territorial government want to change all that by slashing a 550-mile road across the central Arctic from Yellowknife to the coast at Coronation Gulf. That would open a huge new area for development, but it also raises environmental questions.

"There is a clear realization that jobs and the economy are priority No. 1 in the 1990s," said John Todd, the territorial minister of nearly everything, including transportation, economic development and tourism.

The Northwest Territories has only 58,000 people, most of them Indians, in 1.3 million square miles—twice the size of Alaska, with California thrown in.

Unemployment is estimated at more than 16 percent, compared with 11.2 percent nationally. Half of the jobs that exist are in government, and most of the budget comes from Ottawa, the federal capital.

One gold mine is operating in the region between Yellowknife and the sea; another is ready to resume production; a base metals project is on the verge of starting up; and at least one diamond mine may open in the next few years. That could mean a bright future, and an all-weather road probably would attract more development.

"The advantage of a permanent road is that it could encourage other companies,"

said George Patterson, the territory's director of mineral policy. "But it's only an option. It's being studied because of the number of mines that could come into production."

The price tag: \$450 million, plus another \$37.5 million for a port near Coppermine on the sea.

And a second price tag: the environmental cost of cutting a road that will be heavily traveled through a pristine wilderness called the Barrens, the home of the musk ox, caribou and grizzly bear. That cost remains unknown, environmentalists say, but some believe nature can accommodate development.

Most of the Barrens is north of the treeline. It is a rocky tundra dotted with lakes, where polar bears, Arctic fox, wolves and wolverines also roam.

"The road will change the face of the country," said Steve Matthews, a wildlife biologist for the territorial Department of Renewable Resources. "The number one issue is the grizzly...[which needs] large tracts of undisturbed land."

Other issues include the impact on migration of the Bathurst caribou herd, Canada's largest, and the effect of ice breaking for the Coppermine port on inter-island migrations of Peary caribou.

Cournoyea is trying to sell the road project to Ottawa as a moneymaker.

"There is no doubt that opening access to the region will stimulate further exploration and development work," she said in her pitch last year.



She estimated the net increase in the Canadian gross domestic product from new mines at \$13.5 billion, new employment at more than 210,000 jobs.

Above all, from her standpoint, much of that new money would remain in the north.

Metal Mining Corp. is finishing a feasibility study for a base metals mine at Izok Lake, 210 miles from the coast. The company needs a road to Coppermine and a port.

Territorial officials fear that, if Metal Mining builds a road only from Izok lake to the coast, all the benefits will be exported, leaving Yellowknife and the rest of the territory with nothing.

Once a road is built across the Barrens, people will use it—not only mining companies, but tourists, hunters and fishermen.

For some, that raises another fear.

"I don't think they should build it," said Jonas Sangris, chief of the Yellowknife Dene Band, one of many Indian groups struggling for self-government on traditional lands. "There're going to be too many people up there." □

Pack Ice Hinders Ships, hunters

Fairbanks Daily News-Miner, Sunday, Aug. 7, 1994—The late-breaking ice pack north of Alaska has been frustrating more people than seal hunters this summer.

Four icebreakers have been reporting slow going through the ice-locked Arctic ocean near here.

A 432-foot Russian icebreaker, the *Kapitan Khlebnikov*, was moving at 1 mph as it ground its way through the ice pack last

week. Seventy-two tourists were on board—each of whom had paid more than \$13,000 to make the trip through the Northwest Passage into Canada.

A Canadian icebreaker, the *Arctic Iqik*, also was spotted moving slowly off Point Franklin, southwest of Barrow.

A second Canadian icebreaker—the *Louis Ste. Laurent*—is heading toward the top of the Arctic ice pack, toward the North

Pole, on a scientific expedition.

It's being accompanied by a U.S. Coast Guard icebreaker, the *Polar Star*.

If the winds don't shift the ice pack away from land soon, there is some concern that the barges en route to Barrow from Anchorage may have a tough time getting through, officials said.

The barges, due later this month, are carrying building and winter supplies. □

A New Pole Hero

"Expedition ended—want pick-up" was the brief message received on a computer screen in Oslo on April 22.

The message, from Børge Ousland, marked the completion of a pioneer achievement: the first solo and unsupported trek to the North Pole.

When Ousland arrived at 90 degrees north, he added a new name to Norway's list of polar heroes. The 31-year-old North Sea diver from Oslo had made history through his one-man journey to the world's most northerly point.

Ousland is no stranger to the north. Two years ago, he reached the North Pole with Erling Kagge in the first expedition to reach this point with no external support of any kind. Ousland could have asked for no better companion, as Kagge chalked up a parallel victory

last year when he became the first man to go solo and unsupported to the South Pole. Kagge recently climbed Mount Everest alone.

In the course of the 52-day trek, Ousland covered 1,600 miles in temperatures as low as minus 40 degrees Fahrenheit. On the longest day's march he covered more than 50 miles. When he set off on March 2, he pulled a load of 300 pounds, including a rubber dingy for crossing stretches of open water. Before the trip, he weighed in at 185 pounds; by the time he reached the Pole, he had lost 45 pounds, although his carefully planned menu ensured a daily diet between 6,000 and 7,200 calories. Nevertheless, he told the Oslo daily *Aftenposten*, food

was "constantly on my mind."

Loneliness and polar bears were Ousland's greatest fears on the trek. A special headset, with a cassette of poetry recorded specially for the occasion, helped him cope with the first of these problems. Luckily he did not have to face the second.

Ousland's success has been attributed to gritty determination combined with meticulous planning. Special clothing ensured that if he fell into water, he would not get wet to the skin. But its efficiency was never put to the test; the closest he got was wetting one foot. His equipment also included skis adorned with wild flowers painted by the Norwegian artist Jakob Weidemann. □



Preparing for mishaps was key to Ousland's survival.

Cold War Veteran May Fly After Nearly 50 Years On Ice

Fort Worth Star-Telegram, Washington—The last radio transmission from the doomed aircraft crackled over the receiver 47 years ago: "We're heading into the sun," the crew reported, "and we're going to set her down."

Minutes later, the B-29 reconnaissance plane ended a secret mission by crash-landing on a frozen lake in Greenland. It's still there, encrusted with snow and ice, serving as an eerie monument to the Cold War.

The abandoned aircraft may soon sputter to life again as a result of a remarkable recovery operation scheduled to get under way this week. A 16-member team plans to repair the downed plane and fly it home.

The expedition has focused new attention on a little known aspect of the cat-and-mouse game between the United States and the former Soviet Union. The B-29 had been dispatched to the top of the world as part of an intensive effort to investigate the likelihood of Soviet attack via the North Pole.

At the time, some Pentagon officials believed the Communist superpower had established bases on the polar ice cap as launching pads for war.

"There was a lot of paranoia about it, because we just didn't know," said Ken White, whose book, *World in Peril*, chronicles the Air Force's efforts to detect and counter the polar threat. White's father, Maj. Gen. Maynard White, headed "Project Nanook," the code name for the Strategic Air Command's Alaska-based reconnaissance effort.

The B-29, part of a squadron that had been assigned to Project Nanook, took off from Ladd Field in Fairbanks on Feb. 20, 1947, for what was supposed to be a routine scouting mission.

Even in the best conditions, flying over the North Pole was a challenging assignment. One of the primary goals of Project Nanook was to develop a navigation system for dealing with the anomalies of polar flight.

The usual landmarks for navigation—even something as simple as the fact that the sun sets in the West—don't apply in the topsy-turvy Arctic environment. An aircraft flying due north will suddenly be flying due south once it crosses the pole.

To keep their bearings, Air Force pilots relied on celestial navigation, setting their course by the stars.

The B-29 had crossed the North Pole when a heavy cloud bank closed in. At first, the crew was unconcerned, but their optimism sank with the aircraft's gas gauge

after several hours of aimless flight over the Arctic Ocean. Eventually, the aircraft's radar picked up indications of a land mass.

"They were running out of fuel," White said. "They knew they weren't in Alaska. They didn't know whether they were in Canada or Siberia." Still, the risk of capture by Soviet troops seemed far better than ditching in the frigid sea.

With the sun rising in the background, the pilot aimed the plane at a large, flat patch of ice. The aircraft skidded across the frozen shallow lake and came to a stop at the opposite shoreline.

They didn't know it at the time, but the crew members, all of whom survived the forced landing, had touched down in a remote area of Greenland, about 500 miles beyond the Arctic Circle.

Three days later, a C-54 rescue plane retrieved the stranded airmen, who had endured temperatures as low as 50 degrees below zero. Their aircraft stayed behind, one of the first victims of the Cold War.

For nearly five decades, the plane was left virtually undisturbed.

After a British pilot found the plane in good condition in 1985, former Lockheed test pilot Darryl Greenamyer decided to

take a look for himself last year. Greenamyer, who specializes in refurbishing and selling vintage aircraft, is one of the lead organizers of the recovery effort.

"It's in beautiful condition," he said in an interview from San Diego, Calif. "The aircraft was practically brand new when it went down. There's no corrosion at all."

The expedition includes five aircraft mechanics, who will install four newly rebuilt engines on the downed plane. Greenamyer, who plans to leave for Greenland on Tuesday, hopes to have the abandoned craft in the air by the first week of August.

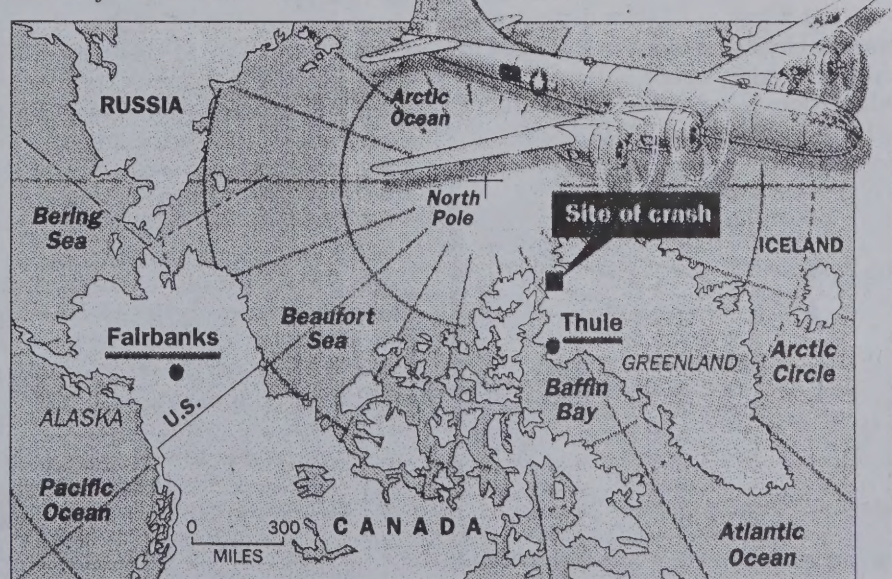
"It will be one of only two flyable B-29s in the whole world," said expedition member Roger von Grote, a former American Airlines pilot from Trophy Club, Texas. "The airplane would be quite valuable." The other B-29 is owned by the Confederate Air Force, an organization of flying enthusiasts based in Harlingen, Texas.

Greenamyer declined to reveal the cost of the recovery effort or his expectations for profit.

"The U.S. Air Force has disclaimed title to it," he said. "We'll see, when we get back, what the airplane's worth." □

On Frozen Ground

A B-29 called the Kee Bird crash-landed on a frozen lake 250 miles north of Thule, Greenland, on Feb. 21, 1947, while on a mission from Fairbanks, Alaska, to see if the Soviets were putting military bases above the Arctic Circle.



Whaler Worry As Protection Expands

by CHRISTINE TIERNEY

Puerto Vallarta, Mexico—Hunters and environmentalists agree that the International Whaling Commission (IWC) has become a whale protection agency instead of fulfilling its original mandate to regulate whaling.

That became obvious, they say, when the IWC decided last week to establish an Antarctic sanctuary for all whales, both endangered and robust species.

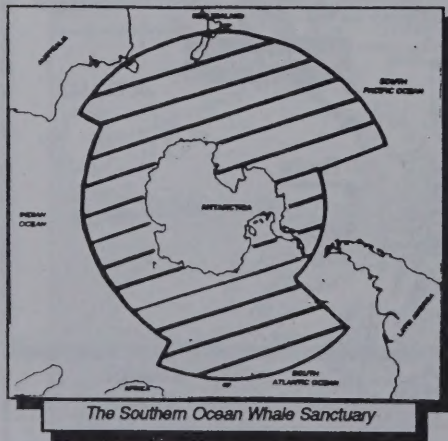
"What this decision reflects is an indication that this forum has been converted from a whaling convention to a whale-protection convention," said Cliff Curtis, whale campaign coordinator of the environmental group, Greenpeace.

"In practical terms, the impact is about because of the IWC's previous moratorium on commercial whaling," said Bjørn Blokhus, spokesman for the delegation from Norway. That Scandinavian country resumed commercial whaling in the North Atlantic last year.

"But the IWC is expanding their mandate...and some nations could lose their patience with the organization," Blokhus said.

None of the IWC members, including the whaling nations, objected to a sanctuary that would protect the near-extinct blue whales and other depleted species from commercial hunters.

What a few members did oppose was the blanket protection extended to minke whales, small baleen whales whose population in just the sanctuary is believed to exceed 700,000.



Japan fought hard against what it viewed as a capricious decision to protect the minke whale for "political reasons" without scientific justification.

"If we introduce such an irrational principle, it could extend to marine resources beyond whales," said Kazuo Shima, Japan's chief delegate to the IWC. □

Going Under in McMurdo

by JOHN PEARSE

Imagine yourself pulling on a cumbersome rubber suit over bulky underwear. You're zippered closed. And the sweat begins to flow. Heavy gloves, giving about as much dexterity as boxing gloves, are pulled over your hands and sealed with duct tape (what would we do without duct tape here?). Some 35 pounds of lead weights are wrapped about your waist, and a heavy set of double steel tanks is mounted to your back. Flippers on your feet and a face mask over your head, with your hair being uprooted by the moving straps and probing fingers that effect a good seal. You feel like you're in a sauna. But not for long.

As you slip into the hole in the sea ice and are surrounded by a swirl of ice platelets, everything changes. Your lips and face sting with cold, but quickly go numb. The hole is barely wide enough to slide through, and the six to seven feet of ice make the tunnel seem endless. Claustrophobia flirts with your inner fears.

And then you're through. Some 75 feet above the bottom, hanging in crystal clear, but dimly-lit water. It's like dropping through the dome of an immense cathedral. Areas on the sea ice near the hole that were cleared of snow earlier by a tractor let shafts of light stream down, giving the impression of light penetrating unwashed glass windows. Far below, indistinct shapes and colors show a pattern of whitish or yellowish mounds and domes against a darker background. In one direction, the view seems endless as the light fades out into a blue-grey hue. In the other, the slope of the sea floor rises up in cliffs and ridges to touch the bottom of the sea ice, or to translucent ice walls and caverns that line the shore. From below, the sea ice looks like the bottom of a heavy cloud bank, with dark patches (sheets of diatoms) and light streaks (following the courses of cracks in the ice). Ice tubes, formed when



water freezes around dense streams of brine dropping out of the overlying sea ice, look like stalagmites,

or ornate medieval decorations.

As you drift downward, and the hole diminishes to a small spot in the ceiling above, the enormity of the place begins to sink into your being. It's like space-walking. Claustrophobia turns to acrophobia. Just you and your partner, connected to each other and the surface by a strand of nylon line. Medusas and comb-jellies drift by in the gentle currents.

The forms on the bottom begin to reveal themselves as a jumble of sponges, anemones, soft corals and other forms of sessile life. A variety of sea stars are scattered about, with the velvety little red one being particularly abundant. Everywhere, the diversity of life becomes a thing in itself as you slowly swim along the sea floor. Sea urchins, sea spiders, feather stars, sea squirts, clams, snails, fishes, shrimps, bristle worms, scuds, sea slugs, slaters, scallops, octopuses, brittle stars, ribbonworms (including rather grotesque, large slimy ones that tend to intertwine together in massive congregations—what are they doing?). A seal glides by effortlessly, giving you a wary eye. Hey, is this the lifeless Antarctic or what?

A tug on the tether line, and you realize that already over a half hour has passed in this timeless, near boundary-less setting. You anxiously look for your partner and for the line leading upward to the escape route above. A slow ascent and an ungainly exit, and you're out again in "your" world of air, and the near lifeless Antarctic ice and snow. □

Ecological Danger Signs In the 'Mystical' Pribilofs

by HAL BERNTON

The Washington Post, July 12, 1994—The Pribilofs sit more than 300 miles off Alaska's southwest coast amid a frigid sea that remains covered by the polar ice cap into early spring. Even in June, the island has stark, treeless vistas and eroding coastlines thrashed by a ferocious sea. Yet the two main islands of the Pribilofs—St. Paul and St. George—are maritime havens of astounding fecundity, supporting some of the largest seabird rookeries in the northern hemisphere and breeding beaches for more than 700,000 northern fur seals, the vast majority of the world's population.

"It's a magical place, a mystical place," said Larry Merculieff, city manager for the island's largely Aleut town of St. Paul (population 750). "I never get tired of it. There's always something new to see and learn."

But even in these remote wildlife havens, scientists are finding ecological danger signs. The nesting counts of some bird species—such as the red-legged kittiwake—have dropped sharply in recent years. Some rock perches once occupied by nesting birds have been reclaimed by tundra grass.

Fur seal populations declined by about half during the 1960s and 70s before stabilizing in recent years. Harbor seal populations also have waned. And throughout the Bering Sea, populations of Steller sea lions have plummeted some 80 percent during the past three decades. The federal government has declared the Steller a threatened species and is scheduled to review that status to see if they should be designated as endangered.

Marine mammal populations naturally fluctuate over time, and scientists are still debating just what's happening in the Bering Sea. But many believe much of the Stellers' decline is related to a lack of food.

Fortified by a rich upwelling of nutrients along a vast stretch of the continental shelf, the Bering Sea supports immense populations of fish, crab and other sea life. They in turn sustain birds, sea lions and one of the world's largest commercial fishing harvests—more than 4.4 billion pounds of fish and crab each year. Merculieff fears the fishermen may

be competing for food with some of the wildlife.

Russians first arrived more than two centuries ago: explorers and a rogues' gallery of pelt-seekers who sailed north from the Aleutian Islands to slaughter sea otters and fur seals. Most of the dirty work was done by native Aleuts, whom the Russians dumped on the then-uninhabited islands.

But the big question is the effect of the commercial harvests conducted by trawlers dragging football-field-sized nets through the ocean. The nets snag more than 2 billion pounds of pollock, small fish that seals, sea lions and sea birds feed on. Pollock also migrate to the Russian side of the Bering Sea.

In a preliminary draft, the National Academy of Sciences researchers state that the intensive fishing of the past three decades is a likely factor in the decline of Steller sea lions. Two species—sea lions and harbor seals—have suffered their biggest declines in areas where the fishing is most intense.

Trawl fleets already have been ordered to stop fishing around key sea lion rookeries. But they challenge the notion that they are to blame for species declines.

They contend that most of the birds and marine mammals tend to feed on small pollock, while the trawl fleet tries to target larger pollock that actually cannibalize the smaller fish. By removing those predators, the trawl fishermen could possibly be increasing survival rates of the young pollock, said Wally Pereyra, a trawl fleet operator.

"At one point in time we were dependent on fur seals, now we're dependent on fisheries," and Michael Zacharof, an Aleut city councilman. Zacharof recently renovated his entire house so that the dining room and front patio face a stretch of sandy beach used by the bachelor bulls. But he says the future lies with the fishing port that now spreads out from behind the house. "We chose our destiny... As a group of people, we had to do something—or die." □



Polar Personality Profile: Major General Adolphus Washington Greely

by RONALD T. REUTHER

The Explorers Journal, Spring 1994—Adolphus Washington Greely was born 150 years ago in Newburyport, Massachusetts, on March 27, 1844, the son of a shoemaker and his wife. At age 17, enlisted as a private in the 19th Massachusetts Volunteer Infantry with which he served through many of the bloodiest battles of the Civil War. He rose from private to sergeant in the 19th Massachusetts and in 1863 accepted a commission in the 81st Colored Troops with which he served at the siege of Port Hudson.

After the war he was detailed for service with the Signal Corps and served on the staff of Gen. Eugene C. Carr during the 1869 campaign in Nebraska against the Cheyennes under Tall Bull, which culminated in the Battle of Summit Springs.

In 1870 he was assigned to assist Brig. Gen. Albert J. Myer in the organization of the U.S. Weather Bureau. During 1872-1873 Greely gathered data and formulated methods for the River and Flood Service, and he was soon recognized as an expert meteorologist.

In the course of his duties with the Signal Corps' Weather Bureau, Greely became interested in climatology and other aspects of scientific geography.

In 1881 the U.S. government organized an expedition to participate with other nations in the establishment and operation of a number of stations during 1882-83 to study Arctic weather and climate. As part of the first "International Polar Year". Lt. Greely was chosen to command the station planned for the shore of Lady Franklin Bay on Ellesmere Island. He and his party of 24 men arrived on August 11, 1881, and established Ft. Conger.

Under Greely's direction the members of the expedition amassed an important collection of data on Arctic weather and tidal conditions, studied the flora and fauna of the region, and carried out a very successful program of exploration and discovery. Two members of the party, Sgt. David L.

Brainard and Lt. James B. Lockwood, reached the farthest point north yet accomplished.

When the relief vessels scheduled for 1882 and 1883 failed to reach Ft. Conger, Greely, following his orders, ended the scientific activities of the expedition, abandoned Conger on August 9, 1883, and proceeded southward toward a prearranged rendezvous. The party encountered extremely difficult conditions, but negotiated the 500-mile passage safely.

At Cape Sabine, using their overturned boat as a refuge, they established Camp Clay to await the hoped-for arrival of relief only to find a cached message that the ship dispatched for that purpose had been crushed in the ice. The relief party had left only a scant 20-days' rations behind before retreating south in panic. The subsequent winter was a nightmare of starvation and despair for the Greely party.

Supplementing their scanty stores with lichens, a few small shrimp, and, finally, their sealskin clothing and the sinews used to bind together the sledges, the party was steadily reduced by accident, exposure, starvation, and one official execution, ordered by Greely for a soldier guilty of the theft of food. Between January and June of 1884, 18 of the 25 members of the expedition perished. This period was characterized by both heroic self-sacrifice and the darker aspects of human behavior. By June 22, 1884, the handful of survivors were, with one exception, confined to their sleeping bags and were within hours of death from malnutrition and disease when the relief expedition under Cdr. Winfield Scott Schley, aboard *The Bear*, finally located the survivors and returned six of them to the United States and safety. (See "More on *The Bear*" on page 23.)

The scientific achievements of the expedition and the hardships endured by the survivors as well as the stirring rescue were soon forgotten amid titillating accusations of murder and can-

nibalism during the sojourn at Camp Clay. Greely was blamed for the tragic outcome of the affair, but he was eventually absolved when it became apparent that most of the tragedy was made in Washington and that the startling practice of cannibalism was confined to members of the party who had died before the arrival of relief.

Scientific data salvaged along with the survivors proved of great value to our knowledge of the Earth's climate and tidal patterns. In due time the soundness of Greely's judgment and the skill of his leadership became clearly established, and he received credit for his accomplishments. He was widely acclaimed as a hero in Europe, and in 1886 received the Founder's Medal of the Royal Geographical Society of London and the Roquette Medal of the *Societe de Geographie* of Paris. In 1923 the American Geographical Society belatedly awarded him the Charles P. Daly Medal.

On May 28, 1886, the U.S. Postal Service issued a Polar Explorers Stamp Series. Greely was one of the five polar explorers honored.

In March 1897, President Cleveland appointed him Chief Signal Officer of the Army with the rank of Brigadier.

During his long tenure as chief signal officer, Greely proved both an astute politician and an innovative administrator. He fought successfully to keep the Signal Corps in existence and ensured that it was staffed with capable officers of proven scientific expertise. He reformed and supervised the operations of the Weather Bureau until it was transferred to the Department of Agriculture in 1891. He also oversaw the construction of tens of thousands of miles of military telegraph and undersea cable, and he was the moving force in adapting radio technology to military purposes. Under his direction, the Signal Corps introduced the use of wireless telegraphy, the automobile, the airplane, and many other modern devices. As the



Lady Franklin Bay Expedition prior to departure. Only six would return. (Greely, fourth from left, front row.)

U.S. delegate to the International Telegraph Congress in London and the International Wireless Telegraph Congress in Berlin in 1903, he also worked successfully to involve the United States in international agreements on communications.

Greely was promoted to Major General in February 1906 and was assigned to command the Pacific Division with headquarters in San Francisco at Ft. Mason. There he was responsible for the coordination of all official relief activities following the great earthquake of 1906. Given full command Greely set up the largest peacetime relief effort ever conducted up to that time.

After this assignment Greely commanded the Northern Division and ended the Ute Rebellion of 1905-1906 without bloodshed. His final assignment was as commander of the De-

partment of the Columbia (Washington D.C.).

In March 1908 Adolphus W. Greely retired from active duty. Following an around-the-world trip in 1909, he occupied himself with writing and various public service endeavors. He was one of the founders of the National Geographic Society in 1888 and remained one of its trustees until his death. It was to that Society's collection that he donated the majority of his personal library, including many volumes on Arctic exploration and several hundred scrapbooks of his own compilation.

On his 91st birthday, on March 17, 1935, Greely was presented with a special Congressional Medal of Honor, the second American so honored for peacetime service. (Charles Lindbergh, another Explorer, was the first.) Greely died on October 20, 1935, at

Walter Reed Army Hospital in Washington, attended by Brig. Gen. (Ret.) Brainard who had shared an earlier approach to death in the frozen hut at Cape Sabine, Ellesmere Island. Greely was buried with full military honors at Arlington National Cemetery.

Greely achieved international fame as a result of his personal fortitude in the Arctic, but he always claimed that his detailed scientific work was far more important. Indeed, when the data collected by the 1881-1884 Arctic Expedition is added to Greely's earlier studies of the floods and climate of the Mississippi Valley, his claim to have significantly improved man's knowledge of the earth's geography, climate, and tidal conditions is fully justified. Greely's accomplishments in the scientific field are all the more striking in that his scientific knowledge was entirely self-taught. □

Antarctic Microbial Study

A two-year study on Antarctic microbial communities is currently being conducted by the Polar Desert Research Center of Florida State University. The study is led by Dr. E. Imre Friedmann, director of the center.

The project centers on the extinction of microbial communities in the most extreme environments of Antarctica's Ross Desert. The study is measuring environmental parameters along a transect from healthy, living communities to dead areas in an attempt to identify the "limit of life." This limit will be used primarily to identify what environmental factors, including temperature, determine the absolute limit of life in the Antarctic desert. □

Physicist Gets a Handle On Unusual Sport

by JONATHAN WEISMAN

Livermore—There is a breed of guys in the world as devoted to ham radios as car guys are devoted to cars—guys who will go just about anywhere to raise their antennae and answer the fleeting missives of ham operators afar.

It is a sport that the uninitiated just cannot understand, admits Bob Schneider, a computational physicist at Sandia national Laboratories. But for those who do understand it, Schneider is an international hero.

For 22 days last winter, Schneider and eight other ham radio buffs camped out on Peter the I Island, a frozen speck off the coast of Antarctica that has been described as the most isolated place on earth.

The Sandia scientist spent last weekend in Dallas, collecting thanks and accolades at the American Radio Relay League's annual convention—and rightfully so. For radioheads, one million strong worldwide, Peter the I isn't just remote. It had been voted the most wanted radio-contact point

in the world.

A certain subset of ham radio operators—known as DXers—desperately wanted to log a call into the island, to claim it as a trophy, add it to their lists. To do it, they just needed someone foolhardy enough to set up a radio station there.

Enter Schneider, not a DXer himself, but a devoted DXpeditioner, the other side of the coin, the contactee.

For 16 days, braving treacherous crevasses, deadly ice cliffs, Antarctic windstorms and a tent fire that could have killed them, Schneider and crew answered radio calls last January and February—60,000 in all, each lasting about 20 seconds.

The expedition cost nearly a quarter of a million dollars, as much as \$20,000 of which came from Schneider's own pocket.

But the scientist just smiles broadly when he's asked if it was worth it.

"It was actually a great bargain," he said. "Tourists who take trips not

nearly as interesting, who just snap some pictures of penguins from a rubber raft, pay from \$15,000 to \$60,000 to go to Antarctica."

The Peter the I venture took two years to plan, involved 10 tons of equipment and was only the 12th landing on the island in history.

Just getting there was an adventure—a trip to England, a Royal Air Force flight to the Falkland Islands and a rendezvous with a Russian ice breaker. Ultimately, the ship rammed through a block of ice, ground to a halt and ferried crew and equipment to their campsite by helicopter.

The expedition was the first ever to be left alone, without a ship waiting off shore. Had disaster struck, the team may well have perished.

Watching that ship pull away was "a bit freaky," Schneider conceded.

And it was all for a few Boy Scout-like merit badges, Schneider explained. □

Jupiter's Comet Spectacular Ends With a Fiery Flourish

by MALCOLM W. BROWNE

New York Times, July 23, 1994—Comet Shoemaker-Levy 9 concluded its spectacular week of death throes yesterday with the fiery plunge of the last of its large fragments into the planet Jupiter.

The impact and explosion of Fragment W offered a particularly good show to observers in Australia and at the South Pole, as well as those in the Australia-based Kulper Airborne Observatory—a C-141 cargo jet with a hole in its fuselage to accommodate a 36-inch astronomical telescope. The last big impact, which occurred about 4 a.m. Eastern Daylight Time, was marked by bright flash.

Many observatories had already ended their observations of comet im-

pacts when Fragment W hit, either because Jupiter was not in their fields of vision or because of inclement weather.

Observations Impeded

A hurricane that had threatened Hawaii forced the international observatories and the Keck Telescope at the summit of Mauna Kea mountain in Hawaii to close their protective domes and prepare for high winds.

High-altitude dust blowing from the Sahara hampered viewing at the Canary islands telescopes, and gusts of frigid wind blew snow around the South Pole's Infrared Explorer telescope in Antarctica, which has produced some of the

most revealing pictures of the cometary impacts.

Some of the last of the 21 fragments expected to hit Jupiter apparently caused no effects visible from Earth. The impacts of Fragments T, U and V all seem to have escaped detection by large observatories in parts of the world well placed to see them.

Astronomers packing their bags to return to their home universities looked forward to extracting exciting discoveries from the mountains of data they collected during the past week, and there were some promising early signs. □

Life Under Icy Seas Offers Advances for Landlubbers

by **MERCER CROSS**

National Geographic, McMurdo Station, Antarctica—The only way some animals stay alive in the icy waters off this continent is through bizarre manipulation of chemicals.

Some fish produce antifreeze 200 times more effective than what's in a car radiator.

The tiny shrimp-like amphipod carries an even smaller pteropod, a sea butterfly, clamped on its back to keep from being devoured. The pteropod harbors chemicals unpalatable to fish.

Brightly colored sponges on the bottom of McMurdo Sound contain chemicals that make them, unlike some of their drab relatives, distasteful to sponge-eating starfish.

Otherwise defenseless nudibranchs—"naked snails"—have unique bioactive compounds in their bodies that prevent Antarctic fish and starfish from taking bites.

A yard-long Antarctic sea worm covers itself with toxic mucus. The substance is so acidic that it leaves marks on divers' gloves.

Gaudy orange corals fill the water surrounding them with a chemical halo that scientists think broadcasts "Don't even think about tasting me."

"It's an interesting detective game," said Mark H. Slaterry, a graduate student in marine ecology at the University of Alabama at Birmingham. He's a member of one of several teams of scientists, supported by the National Science Foundation, that are exploring these seas.

Some of the most interesting and least publicized research is being done on creatures that dwell in the bottom.

"It's a very different habitat than anything else in the world," said Paul K. Dayton, a marine ecologist at the Scripps Institution of Oceanography in La Jolla,

Calif., who began poking around in the Antarctic ooze more than 20 years ago.

In contrast to the younger, still-developing arctic seas, Antarctica is ancient. It broke away from the prehistoric southern megacontinent of Gondwana some 40 million years ago and turned cold about 20 million years later.

In a marriage of scientific disciplines, the co-leaders of Slaterry's research team are chemist William J. Baker, of the Florida Institute of Technology, and a marine ecologist, James B. McClintock, of the University of Alabama at Birmingham.

Wearing rubber "dry suits" over layers of long johns, the scientists dive for their specimens, disappearing beneath six-foot-thick ice for a maximum 30 minutes. Visibility is "another order of magnitude" better than in the Bahamas, McClintock said. With the exception of a few weeks during the summer, a diver can see 1,000 feet in Antarctica, he said, whereas on a good day in the Bahamas, visibility is about 100 feet.

The brief summer science season ended at McMurdo Station, the largest U.S. scientific and logistical base on the southernmost continent, in late February. Research continues in stateside laboratories.

McClintock and his team have known since 1989 about the sea butterfly, which flutters in abundance through the Antarctic water without so much as a nibble from hungry fish. "Clearly it's chemically defended," McClintock said, while its amphipod captor, if unprotected by the toxicity of the abducted mollusk, is an easy meal.

These amphipods may be Earth's only creatures to capitalize on another species' chemistry in this way. This year, Patrick Bryan, one of McClintock's students, identified the substance that makes the sea butterfly repugnant to fish.

Chemical defenses, often broadcast to predators by garish colors, are common. But Antarctica has no visually oriented predators.

What keeps starfish at arms' length from the colored sponges is chemicals. Because the pigments themselves are bioactive, there's no evolutionary incentive for the sponges to lose their color.

The first step in solving such chemical puzzles is to grind up organisms in an electric blender in McMurdo laboratory, separating their components which are tested further in the United States.

Baker and other chemists collaborate with pharmacological and agrochemical companies in the search for practical applications. One substance from a bryozoan—a moss animal—is being tested as an anticancer agent.

Also intriguing scientists are the natural antifreezes that protect certain Antarctic fish. The peculiar proteins were discovered by Arthur L. DeVries of the University of Illinois, who has been trying to unlock their secrets for more than 30 years. He and his wife, fellow biologist Chris Cheng, are still hard at it.

Their aquarium tanks at McMurdo are filled with large Antarctic "cod"—not cod, actually, but Antarctic toothfish—and small Antarctic eelpouts. Different types of proteins keep the fish from freezing.

Commercial interests are seeking ways to use natural antifreeze in such diverse places as salmon hatcheries, operating rooms, fruit orchards and vegetable fields. "There hasn't yet been any proven widespread application or usefulness of the antifreeze compounds," Cheng said.

"There are many questions that haven't been solved, and in the process of solving them, you have new questions to ask," she said. "It will be a continuing process." □

Antarctic Snow Reflects Lead Levels From Gasoline

by **TIM RADFORD**

The Washington Times May 22, 1994, London—British scientists sifting snow in Antarctica have traced the rise of the automobile for the past 40 years—by detecting the growth of lead pollution in the world's only pristine continent.

And, they report, there are signs that the concentrations of lead in the atmosphere are falling, thanks to the growing use of unleaded gasoline.

The concentrations in the polar snows are tiny, said Eric Wolff of the British Antarctic Survey. The atmosphere contains

natural lead from soil, water and volcanoes, but man-made lead pollution can be superimposed on this pattern.

Most of the pollution comes only from the Southern Hemisphere, and 93 percent of the world's cars are in the Northern Hemisphere.

The amounts of lead in the snow were 5,000 times lower than those found in British tap water—but they still told a story. With a continuous record in the annual layers of snow for the past 70 years, scientists using sensitive instruments have produced a brief history of the 20th century, using lead as a kind of pencil line on a graph.

They found they could detect a peak of lead in the '20s, a small trough during the Depression in the '30s and a drop in the '40s, when the world was at war and gas was rationed in Australia.

Up to that time, most of the lead pollution was from the smelting industry. But from 1950 to 1980 there was a major increase as car ownership multiplied, with a slight fall in recent years as nations switched to unleaded gas and Brazil changed to alcohol-based fuels.

"Our results show that nowhere on Earth remains untouched by human activity," Mr. Wolff said. □

Port is Dying, but You Need a Tuxedo

by MICHAEL SPECTER

New York Times, April 9, 1994, Murmansk, Russia—If not for all the platinum blondes in little black dresses, it would be tempting to say that the world's largest Arctic city is dying.

Once among Russia's mightiest and most active ports, Murmansk now sits practically idle, the rusting hulls of a dozen ships rotting in the harbor. Thousands of workers at the enormous Murmansk Fish Cannery, one of the largest in the world, have lost their jobs because of changes in the country's economy. Most of the rest simply get paid for doing nothing.

Hundreds of commercial vessels have been junked and sold for scrap. And the Northern Fleet of the Russian Navy, based near here in Severomorsk, has tucked many of its nuclear submarines into the fjords north of the city and begun to slink away.

"It used to be so busy here you couldn't even move in the water," Sergei I. Greshov said as he maneuvered his tugboat about in the harbor on a clear, cold day when no other ship was in motion. "Around the clock, all the time, the port was filled with people. Now nobody comes here unless they have to. And we all have less than we had before."

Everybody, of course, except for the blondes, and the tough guys in Armani suits who escort them from one nightclub to the next. Recently, the maitre d'hôtel at one such restaurant, the Iceberg, looked disgusted as he turned

away three Americans.

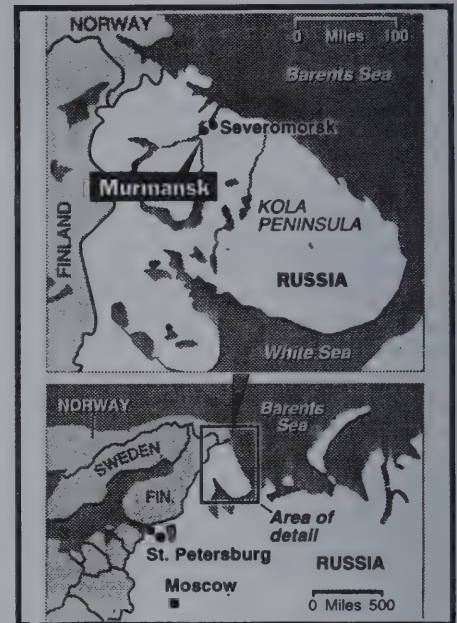
"You have no invitation, no reservation and no tuxedo," he said curtly, before shutting the door. "Why would you think you could eat here?"

It is unclear how many of the city's 450,000 residents have tuxedos—although the number is clearly high enough to keep the Iceberg in business. There are no formal-wear shops in Murmansk. Yet there is a thriving young set—cool guys in sleek Mercedes who carry big rolls of dollars and machine guns with silencers—enough to fill the Iceberg every night until it closes at 5 AM.

As much as any Russian city, Murmansk displays the surreal contrasts of a nation where anything goes for those who are crass, smart, deadly or lucky enough. The aching gulf between the rich and poor grows more apparent every day. Apartment blocks with names like Arctic 77-B and Polar 176 stand in long ugly rows along the edge of the tundra. There are, on average, only 14 clear days a year here. When the sun sets on Nov. 29, it does not rise again until the middle of January.

Gloom is an accepted part of life here. But even for Russia, with all of its current problems, Murmansk has fallen on particularly harsh times. Most people are scraping by on smaller paychecks and less government support.

According to the Regional Office of Statistics, the standard of living here has plummeted over the last three years, since the Soviets stopped subsidi-



dizing nearly every aspect of life in the industrial arctic. Good bread—at 40 cents a loaf—costs 10 times what it did last year.

Less meat, milk and vegetables were produced in the district in 1992 than at any time since 1965. Industrial production here has fallen 25 percent each year since 1991. Exports from the port fell in each of the last three years. Schools closed, construction stopped.

Salaries, which were once higher than in Moscow, now average less than \$60 a month, down by 50 percent. In the mid-1980s, with 4,500 heavy ships calling at Murmansk each year, every day began with announcements of one or two boats slipping into town. The announcements have stopped. □

Ice-Age Mountains

by STEPHEN STRAUSS

Toronto Globe and Mail—The mountains of ice that peaked in the ice age 21,000 years ago were considerably smaller than previously thought, according to a Canadian study that could oblige scientists to revise their thinking about weather and geography.

The new calculations, by University of Toronto geophysicist Richard Peltier, whittle down the thickness of the ice that covered almost all of Canada and parts of the United States by about 1.25 miles.

The standard model used over the past 20 years assumes that the ice sheets reached their greatest extension during this ice age about 21,000 years ago, their maximum thickness estimated at a bit more than three miles.

But Peltier's new calculations reduce the ice mountains to a mere 1.8 miles high.

The study, published in the journal *Science*, recalculates the time frame for land bridges that once connected Alaska and Siberia, England and France, China and Japan, and Australia and New Guinea.

The research has major implications for scientists studying how the ancient ice alps influenced wind, rain, ocean currents and other forces that determined local weather thousands of years ago.

The study also says the alps would not have appeared even as tall as the 1.8-mile maximum height, because their weight depressed the earth beneath them.

For example, in the area around Hudson Bay, when the hole the glaciers dug for themselves was subtracted, the tallest point would have stood only 1.25 miles above sea level. □

Vinland...Greenland...

Why did the Vikings call that big ice-covered island in the North Atlantic "Greenland?"

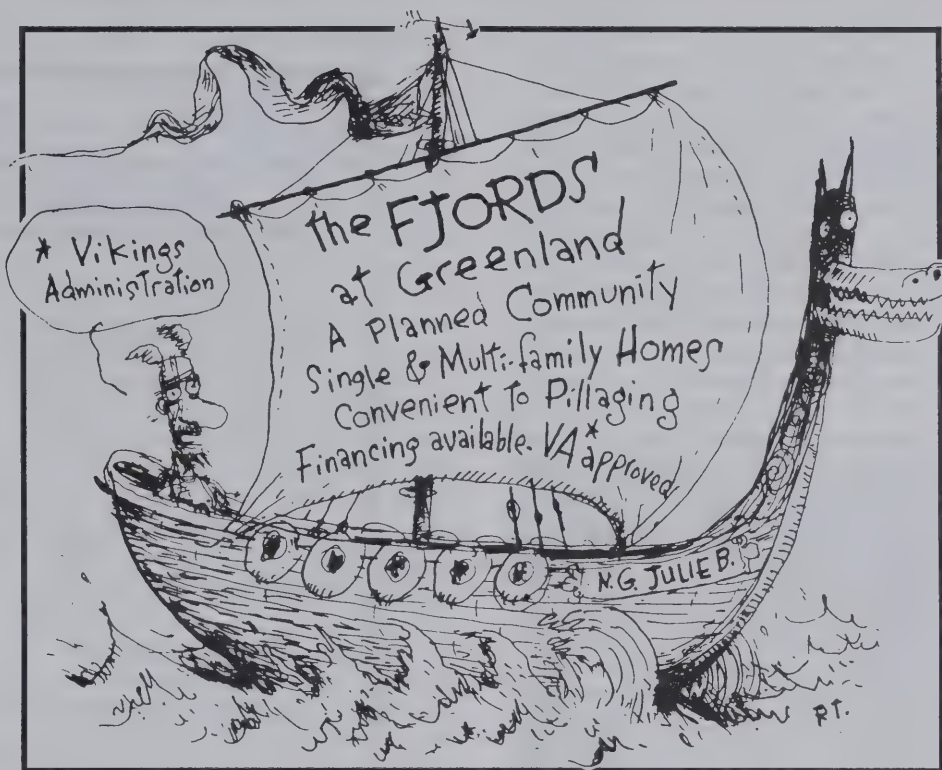
by JOEL ACHENBACH

Washington Post—We distinctly remember being taught in school that the Vikings caught sight of the big island, saw green pastures along the shore and, dunces that they were, named the place Greenland. As with everything else we learned in school, it's not remotely true. They called it Greenland because they were pulling a snow job, so to speak. Erik the Red was hyping the place. He needed settlers.

"It's the original Shady Acres," says Thomas McGovern, a professor of archaeology at Hunter College and an expert on the Viking Greenlanders.

There are green patches of Greenland, but not along the coast. They're up the valleys, in the inland fjords. The two-mile-thick ice sheet that covers the vast majority of Greenland creates a high-pressure zone in the atmosphere (why ice would do this is something we can't figure), and this leads to clear skies and keeps Greenland sunny and relatively mild in those protected valleys. Along the frigid shore there's a much harsher climate.

What zapped the Vikings was climate change. New research shows that around the year 1311, the climate got suddenly and dramatically colder, enough to alter the growing season by a number of weeks. (The "Little Ice Age" lasted until about 1850, when the climate warmed up again. Some heretics say there would have been a full-fledged Ice Age by this time had it not been for the Industrial Revolution pumping CO₂ into



the atmosphere and enhancing the greenhouse effect. An intriguing thought! But it does sound more like an elaborate justification for polluting the environment.)

"This wasn't a change that happened gradually. It's not like going down an escalator. It's more like getting pushed out a window," says McGovern.

The Norse Greenlanders stuck it out, desperately building churches and overgrazing their lands, until sometime between 1450 and 1500, when their last settlement collapsed. What happened to the last of the bunch is unknown.

"They ate their dogs and then they

left," says McGovern.

Why did Greenland's Eskimos (the Inuit, we should say) survive and thrive? Because they had better technology. They had the tools and the knowledge for hunting ring seals when times got tough. The Norse didn't hang out with the Inuit and may have believed the Inuit to be practitioners of witchcraft, a crime for which the Norse didn't hesitate to burn one of their own at the stake. You might say the failure to be multicultural proved fatal to the Norse. And that's why Greenland is now called, officially, Kalaallit Nunaat. (See "First Church," p. 20.) □

Frozen Mummy Found in Siberia

Columbia Dispatch, March 17, 1994, Moscow (AP)—Russian scientists have found the frozen mummy of a Scythian noblewoman who died 2,500 years ago and was buried high in the mountains of Siberia, a report said yesterday.

The ITAR-Tass news agency called the find in the Altai Mountains "sensation," noting it also included wood, leather and felt ornaments buried with the woman.

"To have a body that's preserved in a

frozen state and that also has the articles associated with the individual would be a pretty significant find," said David Hunt, an anthropologist at the National Museum of Natural History at the Smithsonian Institution in Washington.

The Scythians were an ancient Slavic people who inhabited the steppes of eastern Europe and Siberia and were forerunners of today's Russians.

The burial site, near the junction of the Russian, Chinese and Kazakhstan borders, was uncovered by scientists with the Institute of Archaeology and Ethnography of the Siberian branch of the Russian Academy of Sciences. □

Dues

Membership fees for 1995 are due on the first of the year. Many of you have paid your dues for several years ahead and needn't be concerned. For the rest, if you received a dues envelope with your *Polar Times*, please fill out the renewal form and submit accordingly.

Thank you for your support of the American Polar Society. We are on a sound financial footing now, and the future looks bright. □

Antarctic Tourism

In 1985 Dr. Peter Wilkniss, then Director of the Division of Polar Programs National Science Foundation, in a testimony before Congress stated that scientific field research is the largest industry in Antarctica—long ago displacing geographic exploration as the focus of man's activities in the South Polar Region.

Things have changed in the last ten years; tourism to *The Ice* is now the chief reason why men venture south of the Antarctic Circle. Melissa Folks of the International Association of Antarctic Tour Operators reports that 8,016 visitors, (see chart), explorers all, paid for the privilege of traveling south to soak up the ambience of the great explorers of yore and to photograph for themselves the wildlife and the grandeur of the region. This by far tops the number of scientists and support staffs of all nations that conduct research in Antarctica on an annual basis. To put it in another perspective; there were 4,715 men who participated in *Operation Highjump* (1946-47), the 'largest expedition' ever to visit Antarctica.

Modern shipborne tourism in Antarctica began in 1958 with the first ship traveling there for that purpose. The concept of "expedition cruising", coupled with education as a major theme, began with Lars-Eric Lindblad in 1966. In 1969, Lindblad had the first ice-strengthened tourist ship built, the Lindblad Explorer, and sailed her into Antarctica waters on the first of many such cruises. Other ship and tour operators followed, and by the late 1980s, there were at least four ships operating in Antarctica. During the last two austral summer seasons (1992-93 & 1993-94) tourism was carried out by the widest range of vessels used to date, including private yachts, ice-strengthened expedition ships, non-strengthened cruise ships, and icebreakers. Airborne tourism only slightly added to the total counts of tourists—more than 90 percent of tourists have visited Antarctica by ship. □

1993-94 ANTARCTIC TOURIST ESTIMATES

Information supplied by Antarctic Tour Operators

| Vessels | Number of Voyages | Estimate Total Pax |
|--|-------------------|--------------------|
| ANTARCTICA (coastal - by ship) | | |
| World Discoverer ¹ | 8 | 919 |
| Explorer ¹ | 9 | 649 |
| Hanseatic ¹ | 5 | 754 |
| Marco Polo ¹ | 4 | 1,823 |
| Columbus Caravelle ¹ | 7 | 1,047 |
| Professor Molchanov ¹ | 7 | 174 |
| Akademik Vavilov ^{1, 2} | 4 | 276 |
| Bremen ¹ | 4 | 517 |
| Kapitan Khlebnikov ¹ | 4 | 373 |
| Ioffe | 12 | 925 |
| Sagafjord | 1 | @500 |
| SUB-TOTALS | 65 | 7,957 |
| ANTARCTICA (inland - by aircraft) | | |
| Company | No. Flights | Estimate Total Pax |
| Adventure Network ¹ | N/A | 59 |
| SUB-TOTALS | N/A | 59 |
| TOTALS | 65 | 8,016 |



The American Polar Society membership lapel pins have arrived. They are a work of art with an Emperor penguin and a polar bear against a background of the sun riding low on the horizon of a pale blue summer sky. This is surrounded by brass lettering of the American Polar Society set in a field of black, symbolic of the six-month winter at each of the poles. Price is \$5. An order form is inside the front cover.

Thank you!

From Pole to Pole

Last Antarctic Sled Dogs En Route to the Arctic

by WENDY HANSCOM

Bethel-Oxford County Citizen— Twenty years ago - before the ascension of snowmobiles - there were hundreds of working dogs in Antarctica, but by the end of March 1994 none were left. The huskies were forced to leave the Antarctic under the terms of the Antarctic Treaty Environmental Protocol. All dogs had to be off the continent by April 1. The ban was prompted by fears of the possible transmission of canine viruses to Antarctic seals.

Kevin Slater and Polly Mahoney of Mahoosuc Guide Service in Newry, Maine, and Tony Simpson of Bethel, arranged for the last 14 dogs from Antarctica to come to Newry. Nine of the purebred huskies were transported to the village of Inukjuaq on Hudson Bay. In Antarctica, the dogs were managed and cared for by the British Antarctic Survey. Simpson spent two and a half years in the mid-'80s in Antarctica with the BAS at Rothera. He was responsible for the care and management of the huskies, which were used for various scientific expeditions, and later for recreation.

Several private mushers had sought to acquire the BAS team, but the BAS wanted them to go into a program

where they would be worked and bred. BAS dog handler, John Sweeney eventually accepted a bid by Slater, Mahoney and Simpson who proposed to reconnect the huskies to Inuit breeders. "They liked the idea of the dogs going back to the people who developed this breed," Slater said. The Antarctic dogs originated in the coastal Arctic, Simpson said, and the BAS team are in large part the descendants of approximately 40 dogs that were taken from northern Labrador in 1943.

The dogs were shipped air freight on British Airways to Boston. Slater and Simpson picked them up at Logan International Airport and trucked them to Newry.

The full team of 14 dogs were in Newry for only a few days before nine of the dogs began a three-day drive in a truck to Chisasibi, Canada. Five older dogs, seven - to - nine years old, initially stayed behind. Those huskies were shipped to Hudson Bay, for retirement in a breeding program.

Once in Chisasibi, the dogs set out on a 500-mile, 20-day sledding expedition to Inukjuaq, Slater said. He, Mahoney, Simpson, and Sweeney, were accompanied by two other Americans, two Canadians and three

native Inuits. In Inukjuaq the dogs were turned over to Adamie Inukpuk. Inukpuk is a former Inuit cultural teacher and serves on the town's School Board. Inukpuk has owned sled dogs for many years, Slater said. His teams have appeared in several movies, including *Shadow of the Wolf* and *Krabloonik*. The dogs from Antarctica have joined the village's seven other dog teams. □



Itaska Sails the Northwest Passage

M.V. Itaska, under the command of Capt. Allan Jouning, safely navigated the Northwest passage this summer from west to east.

The voyage was planned and led by William E. Simon, former U.S. Secretary of the Treasury. Simon purchased the *Itaska*, a former fleet tugboat, in

May 1993 and had her fitted out for cruising in the polar pack.

The vessel left Nome on Aug. 1, 1994, crossing the Arctic Circle on Aug. 3. Its route of travel was via Barrow, Hershel Island, Tuktoyaktuk, Coronation Gulf, Cambridge Bay, GjoaHavn, Victoria Strait, Lancaster Sound and Davis Strait, re-crossing the Arctic Circle on Aug. 25, a record transit of 23 days. The cruise ended at Sondstrom on Aug. 27.

Simon's staff included nine members of The Explorers Club, while the *Itaska* was manned by a crew of 13, including the captain. Simon explained, "This is just the beginning. We plan to cruise Antarctic waters in February." □



Itaska in the ice.

Ice Breaker! Nuptials at the North Pole

by **PATRICK MURPHY**

Times-Colonist, 22 August 1994—The captain of a Canadian Coast Guard ship parked his vessel Monday on the true North Pole to marry two scientists from the North Sannich Institute of Ocean Sciences.

Capt. Philip Grandy, of the ice-breaker, *Louis S. St. Laurent*, sent an electronic memo to Ottawa Monday that the crews of his ship and the U.S. Coast Guard cutter, *Polar Sea*, were taking the day off work to celebrate the wedding of chemist Louise Adamson and oceanographer Doug Sieberg at position Latitude 90 degrees North.

The two ships, carrying scores of Canadian and U.S. scientists, made history as the first from North America to reach the pole on the surface. They are on a summer-long voyage, which started July 17 from Victoria, through the northern ice pack to map and measure the environment in the Arctic Ocean.

Adamson, who has been with the insti-

tute for three years, is involved in research on the distribution and behavior of contaminants of radioactive waste organochlorines, heavy metals, hydrocarbons and acid waters in the ocean,

Sieberg, right-hand man to Canadian project head Ed Carmack, has been at the institute for 16 years. He is in charge of logistics for the expedition.

Last year Grandy completed the first-ever transit by a vessel of McClure Strait, and Monday he followed it up by stopping on the North Pole.

"Throughout the day, the crews of the *Polar Sea* and *St. Laurent* will combine efforts to participate in special events to mark the occasion," he said in his memo.

The government of the Northwest Territories issued him the legal authority to conduct the wedding service.

Since the ships entered the ice late last month, scientists have sent back reports on several projects of far-reaching scientific significance on the little-understood ocean.

They have set out sensors to measure the bump and grind of the ice on the ship. They also have recorded that the influence of the Atlantic Ocean on the Arctic Ocean is much stronger than previously suspected, which could indicate a rise of temperature in the Arctic.

The contaminants discovered on the ocean floor may have been carried hundreds of kilometres by ice, the scientists have reported. The ships ran through 200 nautical miles of heavily soiled ice at the start of the voyage from the Pacific Ocean.

One of the scientists said this dirty Ice probably came from the North American side of the Arctic, but new encounters with dirty ice appear to have come from the Siberian or Russian side.

In between these two dirty shelves are hundreds of kilometres of clean ice.

The ships left Nome, Alaska, on July 24 and will work in the ice for 55 days before returning to Barrow, Alaska. (See "Ice-breakers," p. 3.) □

Texaco, Partners Plan to Develop Arctic Fields

by **CALEB SOLOMON**

The Wall Street Journal—Texaco Inc. and three other oil giants formed a company to explore and develop huge fields beneath the isolated tundra of Russia's Arctic Circle.

Texaco and its partners expect the project to be among the first large-scale Western oil ventures approved by the Russian government. Texaco, based in White Plains, N.Y., holds a 30 percent interest in the venture, as does Exxon Corp. of Irving, Texas; Amoco Corp., Chicago; and Oslo's Norsk Hydro SA. Each owns a 20 percent share of the company.

Texaco officials have been working on the project for more than four years and decided to bring in partners to share the costs and risks, both political and logistic. According to industry estimates, the project could require expenditures exceeding \$50 billion over its 50-year life.

Enormous Risks

"This is one of the megaprojects in the world," said Peter Bijur, a Texaco senior vice president. "Right from the get-go, we knew the risks were enormous."

The oil fields lie in a virtually uninhabited, 2,847-square-mile region of Russia called Timan Pechora, about 1,100 miles northeast of Moscow. Besides having to build roads, pipelines, houses and other infrastructure and to drill in winter tempera-

tures as low as minus 70 degrees, Texaco and its partners said they will have to build a tanker terminal in the Pechora Sea to export the crude. Ice covers the water seven months of the year, so special tankers would have to be built.

The political challenges are equally daunting and more immediate because of uncertainty in Russia. Bijur said the partners won't drill wells until they complete negotiations of a contract with the Russian government, called a production sharing agreement, on how much oil the country will receive from Timan Pechora's output. Bijur said that under the terms being discussed, Russia would receive more than 50 percent of production. In addition, the group also will seek to have its agreement approved by Russia's parliament. Bijur predicted that could happen later this year. T. Don Stacy, an Amoco exploration official, also expressed confidence, saying he just returned from Russia and received assurances from several top-level government officials that "this project is on a priority track to get approval." He acknowledged, however, that the project's "largest risk is political risk."

Others were more skeptical on the timetable. "There's a tendency of individual agencies in Moscow to tie you in knots," said Thane Gustafson, a director in the Washington office of consultants Cambridge Energy Research Associates.

A Question of When

The Timan Pechora project is one of more than a half-dozen large Western oil company efforts seeking Russian production-sharing agreements and subsequent parliamentary approval. "These projects will probably happen sooner or later. It's a question of when," said Peter Haulder, a Russian oil specialist in London with consultants Arthur D. Little Inc.

If they receive approvals, the Timan Pechora partners will start spending more than \$100 million to drill and perform tests over three years in the Roman Trebsa field, the largest of 11 fields discovered so far in the area. This "appraisal" work is designed to better understand the field's production potential.

At this point, the group estimates total recoverable reserves of more than two billion barrels of oil from the entire area, but officials say the estimate is conservative. "I hope it's a lot more," Bijur said; the appraisal work should eventually make clear the amount.

The next phase of Timan Pechora, entailing early development of at least one field and the construction of the tanker terminal, would quickly require spending of several billion dollars, Bijur said. He said the group expects production to climb to about 120,000 barrels of crude a day sometime between the years 2000 and 2003. □

Robot Explorer Enters Volcano

The New York Times—An eight-legged robot named Dante II came alive on the rim of an Alaskan volcano Friday, taking its first steps toward exploring an active crater and proving that it can extend the reach of human scientists into such dangerous places.

The robot began its trek into the dark inferno of the smoldering crater after being delayed for several days by balky components and unfavorable weather in the vicinity of Mount Spurr, a volcano 80 miles west of Anchorage.

The walking machine and most of its support equipment were lifted to the crater by helicopter Tuesday, but unfavorable weather forced a crew of engineers to cut short its effort to hook up and test the components.

Engineers worked Thursday to repair malfunctioning components, allowing them on Friday to complete the assembly of a satellite communications system, to start a generator to power up and test the robot and to send it on its way for what was expected to be five days of walking, climbing and exploring.

Researchers from Carnegie Mellon University's Robotics Institute, which built Dante, estimated that it would take the robot two days to walk and rappel to

the crater floor, about 600 feet below the rim.

If the machine, studded with sensors and eight video cameras, survives the trek through snow, rock slides and fields of boulders, it will spend a day mapping the crater and measuring the temperature and composition of gases escaping from below. Then it will climb out of the crater, an effort expected to take two days.

William Whittaker, head of the Carnegie Mellon team, said the robot appeared to be in good condition, even though it had suffered some "bumps and bruises" during weeks of travel from Pittsburgh, field tests and days spent sitting in the open during cold, rainy weather.

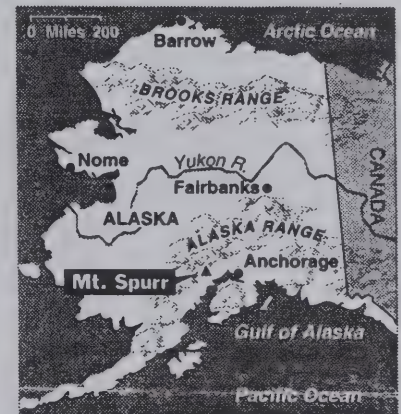
"It's lost a little of its polish, but it's ready to go," Whittaker said in a telephone interview. "Even early in its walk, we'll be seeing new things and going into new territory we've not experienced before."

If successful, scientists say, the Dante mission will not only give volcanology a valuable new tool, but will also prove the concept of using robots to explore places too hazardous for humans.

Mount Spurr, for instance, erupted

three times in 1992 and is constantly subject to quakes and rock slides. Scientists also say the Dante mission will give humans experience in controlling robot explorers at a distance, a prelude to similar missions on the moon and other planets. Dante stands 10 feet tall with its arched sensor mast and weighs 1,700 pounds. It creeps along with a crab-like gait that covers about a yard a minute.

The machine is secured by a 1,000-foot tether cable, anchored to the rim, that is reeled out as the robot descends.



The New York Times

Dante II is exploring crater of Mount Spurr, Alaskan volcano.

Cook's McKinley Claim Gets Climbers' Support

The Washington Times, July 25, 1994, Seattle (AP)—In the early 1900s, Dr. Frederick Cook claimed to be the first person to reach the summit of Mount McKinley and the first to reach the North Pole. His peers laughed and called him a fraud.

But a group of mountain climbers who recently retraced Cook's Mount McKinley path say they found proof he got closer to the top of the 20,300-foot Alaska peak, North America's highest, than most historians have allowed.

While there's probably no way to prove or disprove that Cook made it all the way, the climbers say they're confident at least some of the mudslinging he endured to his deathbed was unjust.

"I think what we did is reopen a closed book," said Scott Fischer of Seattle, a member of the eight-member team that returned from Alaska last week.

Cook, a physician who was an outstanding Arctic and Antarctic explorer in his time, said he scaled the summit in

1906. His problems started three years later, when he returned from an Arctic expedition and said he reached the North Pole in April 1908.

Robert E. Peary, a navy civil engineer, returned from the Arctic a few days after Cook did. He also reported reaching the North Pole.

The debate over who was the first to discover the pole resulted in a smear campaign. Cook historians say Peary attacked Cook's McKinley claim as a way to discredit his North Pole claim. And there's evidence Peary's camp paid \$5,000 for an affidavit from Cook's McKinley climbing partner, Ed Barill, to discredit Cook's story.

Cook was eventually expelled from the influential Explorers Club, of which he was once president, for perpetrating fraud, according to news accounts.

Today, most historians and mountaineers credit Archdeacon Hudson Stuck and his party as the first to reach Mount McKinley's summit, in 1913.

Using Cook's 1906 diary and sketches, along with other recent finds, the modern-day team set out to put the Cook controversy to rest. The expedition, led by Seattle polar historian and mountaineer Ted Heckathorn, was funded in part by a grant from the Frederick A. Cook Society of Hurleyville, N.Y.

Three climbers—Fischer, Doug Nixon of Oak Harbor, Wash., and Vern Tejas of Anchorage—scaled a ridge at approximately 11,500 feet. What they saw and took photos of from there matched Cook's descriptions and sketches perfectly, they said.

Their findings would have put Cook within 10 miles of route-distance from McKinley's summit. Most of the evidence present against him is that he never got above 6,000 feet.

"I'm following what this guy wrote and the pictures he drew, and I matched him," Fischer said. "From the same spot, he says he sees a ridge that goes to the summit. I'm standing on a ridge that goes to the summit." □

First Church in the New World

Santa Monica, Calif., Aug. 16, 1994—Jonas Faber, an Inuit artist from Greenland, and Jay Fiondella from Santa Monica, Calif., announced the filing on Aug. 15, 1994, of a non-profit corporation called Christianity 1000, Inc.

The specific purpose of the corporation is to rebuild the first-known Christian church built in North America in the year 1000. This church will be rebuilt on the original site in Brattalid, Greenland (Greenland being part of North America).

Brattalid was the home of the famed Erik the Red. It was here that the United States government built an air base in 1941. The Air Force base, called Blui West 1, was built on the old Norse settlement of Stokaness, now called Narsarssuak.

Leif Erickson was on a trading trip to Norway in 999 when the king of Scandinavia, King Olaf, converted Leif and his crew to Christianity. Leif went back to Greenland and Iceland with two monks and converted most of the people of those countries. Tjodhilde, Leif's mother, and Erik the Red's wife also embraced the new religion, but Erik the Red wanted no part of it and moved to another farm. After all, he was the founder of Greenland (983)—the man who talked 800 settlers into moving to this icy island. He must have seen this new religion as a threat to his power

as he stayed with his god, Thor.

So Tjodhilde and the women of Brattalid built the first Christian church in North America. This was the year 1000. It was the first women's lib project in North America.

The Norsemen survived in these settlements across Greenland until 1419, when European pirates attacked and destroyed most of the villages in Greenland. They burned everything and took the survivors back to Europe as slaves. Some Norse escaped into the mountains where they intermarried with the Inuits.

It is generally believed that the last North American Norsemen died off in the early 1500s. The Norwegians sent more than 10 expeditions over the next 250 years looking for their people, but did not find any. In 1961, some Greenland sheep farmers of Brattalid wanted to build their own church and chose the best site. During the excavation, they found the remains of another church. The Danish government, which ran Greenland, sent an expedition that conducted an archaeological survey. They found Tjodhilde's church and 150 bodies, which they sent back to Denmark to study. It is a very interesting coincidence that the Greenland sheep farmers chose the very same spot for building a church that Tjodhilde did nearly a thousand years earlier.

Christianity 1000 will raise funds to rebuild Tjodhilde's church and will maintain it and the surviving Norse ruins. We hope to have it finished for the year 2000 so we can celebrate the 1000th anniversary of Christianity in North America. This will be a non-denominational house of worship, open to all peoples.

If interested, please write to Jay Fiondella, 1657 Ocean Ave., Santa Monica, CA 90401, or call (310) 395-1741. (See "Vinland...Greenland," p. 15.) □



Envoy to the Arctic

The Washington Times, May 18, 1994—When we heard that Canada plans to name an ambassador to the Arctic, we thought the folks in Ottawa had spent too much time out in the cold.

First, we wondered what kind of career move it is to be sent to the Arctic Circle. Then we asked where will the embassy be, the North Pole?

Well, we were told we were being flip-pant.

The Canadian Embassy here says the future of the Arctic is a very serious issue warranting international attention.

Arctic issues involve many environmental concerns and human problems, especially for Inuit people living there. Canada occupies 30 percent of the Arctic land mass.

Canada is not the only country with territory in the Arctic Circle to appoint special envoys for the top of the world.

"We are joining our Nordic neighbors in creating a special ambassadorial position for circumpolar Arctic issues," Canadian Foreign Minister Andre Ouellet said this month.

"The threats to Arctic security are global in scope. Solutions to these threats can only be achieved in a multi-lateral context."

An ambassador will be appointed within the next six months, he said. □

Fatal Fiasco

*History is fine fiction in the hands
of Beryl Bainbridge*

by R. Z. SHEPPARD

The facts are these: In 1910, British Navy Captain Robert Falcon Scott set out on his second expedition to Antarctica. Studying penguins was important, but there was also the urgency of beating the Norwegian explorer Roald Amundsen to the South Pole. The British brought motorized sleds and shaggy ponies, but not enough dog teams. The sleds and horses soon broke down. On Jan. 18, 1912, Scott and four companions finally dragged themselves to the bottom of the world where they found a month-old note from Amundsen. On the way back, the runners-up had to fight fatigue, blizzards and temperatures low enough to splinter their teeth. Nobody finished. Only eleven miles from safety, Scott was among the last to die.

It is hard to retell this story without commonplaces about the sporting British and their plucky amateurism. In her new novel, *The Birthday Boys* (Carroll & Graf; 189 pages; \$18.95), Beryl Bainbridge imagines the icebound band as the last gentlemen of the Edwardian Age. After them, the deluge: two world wars, a lost generation and a crumbling empire.

Read in this context, Bainbridge's Scott is less than heroic. The novel is based on historical records, but the dialogue, descriptions and thematic patterning bear the author's elegant stamp. Her Antarctic glitters and inspires: outcrops of jet-black rock kept bald by constant winds; prismatic ice masses shot with rose, blue and violet. As Scott and the other explorers recall their experiences, they foreshadow larger events. The dinner parties and official send-offs suggest a fatal national overconfidence. Scott's sensuous, assured wife already has one lively foot in the jazz age. In a hemisphere where seasons are reversed, birthdays and Christmas hint at endings rather than beginnings. Sailing south in the summer heat, the men sleep on top of the ship's ice locker.

"In the end, it may well be every man for himself, but in the beginning, it has to be every man for another," says Scott, whom Bainbridge has perfectly positioned between the hopes of the 19th century and the disillusionments of the 20th. □

Antarctic Splendor (Esplendor Antártico)

by JOHN SPLETTSTOESSER

Author: FRANK S. TODD; 1983; published and distributed in English-speaking countries by Hancock House Publishers, 1431 Harrison Avenue, Box 959, Blaine, WA 98231-0959; and Hancock House Publishers Ltd. 19393 Zero Avenue, Surrey, B.C. V4P 1M7; Published in Spanish-speaking countries by Diseñadores Asociados Ltda. Pucuro 2151, Santiago 9, Chile; Spanish version by Dra. Betsy Pincheira.

177 pp. *Special Patron's Deluxe Limited Edition (signed by author), \$75.00 (US). Postage and handling in North America \$6.00 Outside N.A. add \$15.00 for air mail.*—The world's literature is replete with countless renditions of coffee-table books with pretty photographs, and many of them about Antarctica. What makes this book different is the author and the quality of truly exceptional photographs, representing a life-long love of the continent and all it offers. It is mainly a book of photographs, which follow a brief Preface and then a 10-page Introduction. All text in the book is in both English and Spanish, including captions for all photographs.

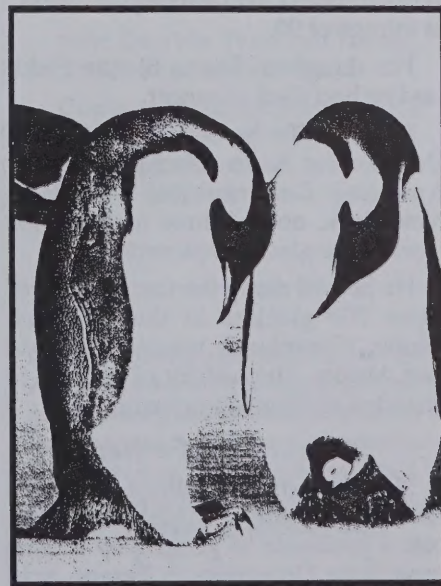
Frank Todd is best known for his work as a naturalist and expert on birds, but he has a very diversified background. He was at Sea World in San Diego, California for many years, where he created *Penguin Encounter*, for which he is probably most widely known. Other *Penguin Encounters* have followed in the U.S., as well as overseas, all a tribute to Frank's success in displaying wildlife in a realistic setting. He has spent more than 20 summer seasons in Antarctica, and is author of many books and articles reflecting his research and travels as a professional photographer. He lives in San Diego.

The photos are the highlight of the book, and are grouped into various subjects. Although Frank's primary field of interest might be considered to be penguins, he is knowledgeable about everything that goes on around him, and has a talent for recognizing a

scene that tells a story. Photo subjects include icebergs (Including a spectacular dust cover scene of a deep-blue colored iceberg with chinstrap penguins on it), plants, fossils plants, dinosaur, isopod, all penguin species found in Antarctica, other birds, seals, and whales.

For many years, and mixed in with his research on Antarctica, Frank has also been a lecturer/naturalist on tour ships that go to Antarctica, as well as visits to an emperor penguin colony that has been reached by private aircraft within the last few summer seasons. His presence on a tour ship is an asset and a drawing card for the tour companies, and he has a considerable following of passengers associated with birdwatching and similar organizations. His vast knowledge of "The Ice" is reflected in his lectures and routine conversations. He is not only "Mr. Penguin," but also "Mr. Antarctica."

Whether you might need another pretty coffee-table decoration or not, this book is a must for anyone who appreciates the magic and mystique of Antarctica. It is a labor of love, and the contents reflect the author's sense of respect for the continent. □



Winterdance: The Fine Madness of Running the Iditarod

by DONALD MCCAIG

Author: GARY PAULSEN; Harcourt Brace; 256 pp; \$21.95—There are only a handful of indispensable dog books: *White Fang*; *Lassi, Come Home*; Konrad Lorenz's *Man Meets Dog*; Dion Henderson's *Algonquin*; and Vicki Hearne's *Adam's Task*. Gary Paulsen's book, *Winterdance*, belongs among these classics.

Paulsen, who is also a noted children's author, has written an account of how he ran the hardest sled dog race in the world—the Iditarod. He had no sponsor, no money—his neighbors took up collections so he could get to Alaska from Minnesota, where he was then living. He lacked expertise. "I knew nothing of Alaska, crossing mountain ranges, running on sea ice, racing with a team over 1,000 miles, 1,100 miles of wilderness, 1,180 miles of snow and deep cold, cold like I had never even imagined, winds beyond belief, roaring waters and deadly dreams—a world, a whole world beyond my knowing. Right then I was probably one of the least qualified dog

drivers on the entire planet to go up and run the Iditarod."

He already had a few dogs he used on his Minnesota trap line, including a gifted lead dog, Cookie. When he started adding half-wild Canadian dogs to his team, things got a little crazy. On an early training run, everything was going swimmingly until the dogs took after a rabbit. "I was now in the position of going rabbit hunting sitting on a rusty 1957 Schwinn [bike] with a chrome tank and tattered handlebar tassels, being pulled through thick forest by five dogs. There was never really any hope that I would make it."

Paulsen got to Alaska in December to train for the March race. His 20 dogs were not cute. They were not "almost human." One day, passing another team on the trail, the dogs got into a fight. The other musher pulled the dogs off, holding his lead dog, the provocateur, behind him. "While he held her, and I dragged my dogs past, she absolutely tore his ass to pieces. It was like a meat grinder back there, shredding his clothing, spitting

out bits of insulation and butt and ripping anew.

"That things is a menace," I said. "Why the hell do you keep her?"

"He stared at me as if I were insane. 'Christ, man, she's the best dog I've ever had. I've never seen her tug go slack.'"

In his all-too-brief training period, Paulsen discovered that the musher was right. "Tugs, pulling, that sweet curve of power from the gangline and up over their backs became everything—more than money, love, family—more than life."

It is hard to find a page in this laconic book without an insight, hard to find a word that could be cut without loss. Halfway through reading it, when I knew I'd be finished too soon, I yearned for more: How about more race history, profiles of other mushers, more stories? By the last page, I had been told as much as I needed to know, a bit more than my heart could easily absorb.

Winterdance is beautiful, and it is very funny, and it is about men and dogs and their souls. □

William Field, 90, Leader for Decades In Study of Glaciers

by WALTER SULLIVAN

The New York Times, June 18, 1994—William Osgood Field, a leader in the study of glaciers and their shaping of the landscape, died on Thursday at his home in Great Barrington, Mass., at the age of 90.

His daughter, Diana Sloane Field, said he had died of cancer.

In the 1950s he headed the World Data Center A for Glaciology at the American Geographical Society in New York, one of three archives for worldwide glacial exploration.

He helped study the fluctuations of some 200 glaciers in the southern Andes, Greenland, western Canada and Alaska. The history of glaciers is an index of climate fluctuations.

A Founding Father

"If scholarly disciplines can have founding fathers," Dr. Melvin G. Marcus, a professor of geography at Arizona State University in Tempe, said

recently, "surely Bill Field is one of the few key elders who sired the field of glaciology." Like Mr. Field, Dr. Marcus was for many years a board member of the American Geographical Society.

Mr. Field was born on Jan. 30, 1904, and educated at the Hotchkiss School and Harvard University, where he received a bachelor of science degree in geology in 1926. He became a research associate with the American Geographical Society in 1940 and later served for many years as its director of exploration and research.

Although Mr. Field retired in 1969, he continued to serve the society. He wrote *Mountain Glaciers of the Northern Hemisphere*, published in 1975 by the Army's Cold Regions Research and Engineering Laboratory.

Mr. Field was also a founding father of the American Polar Society and served as Treasurer from 1969 until his death.

Among his honors were the Charles P. Daly Medal of the American Geographical Society, the Busk Medal of the Royal Geographical Society, the Explorers Medal of the Explorers Club and the Seligman Crystal of the International Glaciological Society.

In addition to his daughter, he is survived by his wife, Mary Losey Mapes, whom he married in 1963. His previous wife, Alice Witherow, died in 1960. Other survivors include a son, John Osgood, of Chestnut Hill, Mass., a brother, Frederick Vanderbilt, of Minneapolis, two sisters, Margery Wilde of Lenox, Mass., and May Jackson of Needham, Mass., and two stepsons, Anthony Halsted Mapes of New Britain, Pa., and Peter Losey Mapes of Miami.

Rev. Father Gerard James Creagh

by BRIAN SHOEMAKER

Father "Gerry" Creagh died suddenly on August 6, 1994 of a heart attack in Christchurch, New Zealand.

"Gerry" is remembered by many generations of Antarticans as the *Chaplain of Antarctica*. He first volunteered to serve as Antarctic Chaplain in 1967 when the United States Navy was unable to fill the billet due to a shortage of priests. For over 25 years Father Creagh spent his vacations *On the Ice* ministering to the New Zealand and

American community at McMurdo Sound. When his official duties took him back to New Zealand, Gerry arranged for other *Kiwi* priests to take his place.

Over the years Gerry became as much of an institution as *The Chapel of the Snows*, the southernmost church in the world. He was often called to perform special services in field camps and at outlying stations including South Pole Base itself.

His tenure spanned all three *Chapels of the Snows*—the first built by Sea Bees in 1955 during Admiral Dufek's time, the second after the first burned in the 1970's and the modern *Chapel of the Snows* designed by an architect in the late 1980s.

He served his flock in Antarctica longer than any other chaplain. For this continuous and devoted service the Chief of Chaplains of the United States Navy officially designated Gerry an Honorary Navy Chaplain in 1975.

Gerry is buried in Christchurch at Bromley Cemetery, but his memory and his legacy remain *On the Ice*. □

The HeroDocks in Reedsport, Oregon

The Central Oregon Coast, on the Umpqua River, may be a strange place to find an Antarctic research vessel. But there it is. A visit to Reedsport, Oregon is a two-fold experience, to say the least. Join a guided tour of *The Hero*. Experience what life was like aboard the historic research vessel. In the Antarctic Wing of The Umpqua Discovery Center, see memorabilia, photographs and pieces of equipment on display. These are temporary exhibits and wonderful plans are in the works by The Hero Foundation to expand the Antarctic and *Hero* displays. You can't miss the "Bigger than Life" statue of the legendary Antarctic explorer, Admiral Richard Byrd.

As a continuing effort in revitalizing the historic waterfront, you will find The Umpqua Discovery Center. The Center is dedicated to two themes. These themes are displayed in two

More on *The Bear*

In the last issue of *The Polar Times*, page 17, we recommended that readers interested in *The Bear* read *The Sea of the Bear* by LCDR M.A. Ransom, USN (Ret). The following were also recommended by Old Polar Explorers:

1. *Gales, Ice & Men*, Frank Wead, Dodd Mead, New York, 1937-1938.
2. *Track of the Bear*, William Bixby, David McKay, New York, 1965.
3. *The Great Ice Ship Bear*, Polly Burroughs, Van Nostrand Reinhold, New York, 1970.
4. *The Bear, Ship of Many Lives*, Stella F. Rapaport, Dodd Mead, New York, 1970.
5. *Immortal Bear; The Stoutest Polar Ship*, Robert Rankin & H.R. Kaplan, G.P. Putnam & Sons, New York, 1970.

Numbers 3, 4, and 5 are written for young people, eight years and up. There are a good many interesting photos, etc. Unfortunately, there are not a lot of maps. □

Announcements

USS GLACIER (AGB-4)

Reunion Date: Sept. 21-24, 1995

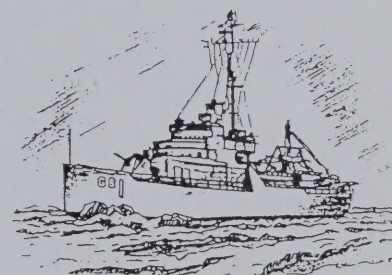
Site: Holiday Inn, Peabody, Mass.

Contact: James A. Tinch, 901 Chestnut St., Livingston, TN 38570, (615) 823-7467.

WIND CLASS ICEBREAKERS

Crew members from "Wind Class" icebreakers who have made trips to both the Arctic and Antarctic regions.

Contact: Bob Johnson, 241 Christian Ave., Stony Brook, NY 11790, (516) 689-6181



U. S. S. BURTON ISLAND AGB-1

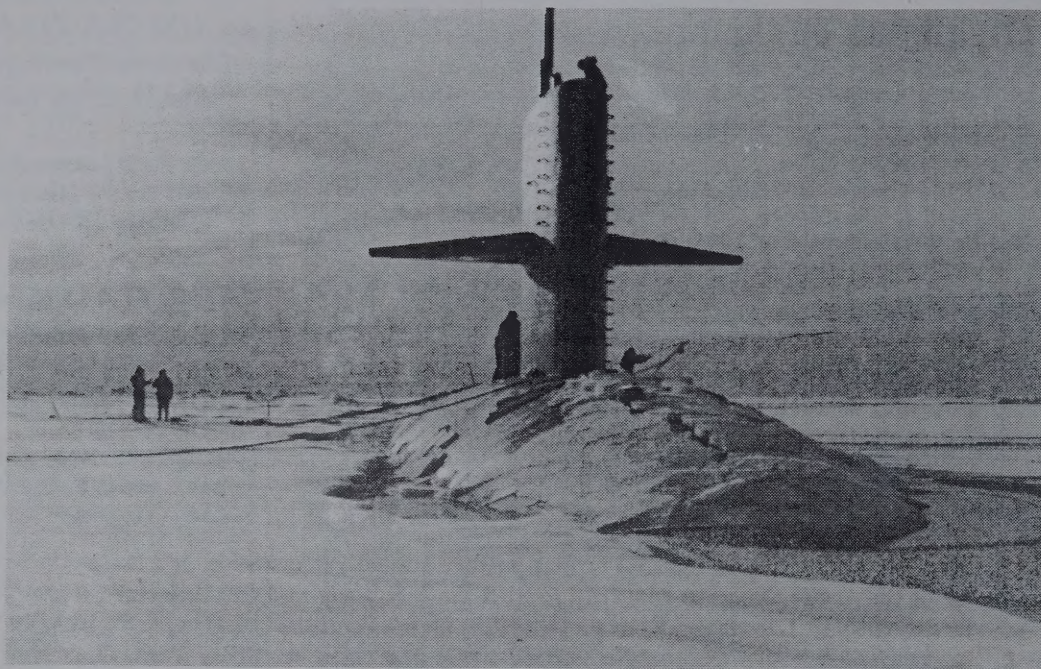
USS BURTON ISLAND (AGB-1) Reunion Association

Reunion Date: 3-6 May 1995

Site: Double Tree Inn Motel, South Center, Seattle, Wash.

Contact: Michael J. Bonner, 1034 Hemlock Ave., Imperial Beach, CA 91932; (619) 575-7980, hm; (619) 545-7864, wk.

If you are planning a reunion, let us know as soon as possible so we can publish the details in a timely fashion. Better still, we will publish "inquiries of interest" in a reunion for members of polar expeditions. Then, after the celebration, we will carry an article with the details of the get-together.



USS Pargo tethered in an ice lead near the North Pole (above) and scientists preparing to collect samples from the water column in the central Arctic Ocean during the civilian science cruise in 1993. (Courtesy of the Arctic Submarine Laboratory, USN.)